

**RESPONSE TO COMMENTS**  
**REGARDING THE RESISSUANCE OF THE FOLLOWING NPDES PERMIT**  
**QUABBIN WIRE & CABLE COMPANY, INC. MA0030571**

**Introduction:**

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) solicited public comments from December 20, 2006 through January 18, 2007 on the draft National Pollution Discharge Elimination System (NPDES) permit to be issued to Quabbin Wire & Cable Company, Inc. (Quabbin).

The Draft NPDES Permit is for the discharge of process wastewater. The facility discharges to the Ware River.

During the public-notice (comment) period EPA-New England received comments from the Massachusetts Riverways Program (Riverways).

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's responses to comments received on the draft NPDES permit and any appropriate changes made to the public-noticed draft permit as a result of the comments. The final permit is substantially similar to the draft permit that was available for public comment. EPA did, however, improve certain requirements in the permits as a result of the comments raised. In addition, EPA and MassDEP noted some errors in the permit which were corrected. These improvements and corrections are summarized below and are reflected in the Final Permit.

**Changes Made to the Final Permit as a Result of Public Comments**

1. Reduced outfall 003 effluent flow limit from 0.025 MGD to 0.020 MGD and added footnote to clarify flow estimation method.
2. The table in Part I.A.1 has been revised to indicate that flow must be monitored continuously with a recorder.

**Corrections**

3. Sampling type for BOD has been changed from grab to composite
4. The list of WET test analytical parameters in the effluent limitations table (Part I.A.1) to be reported in the monthly Discharge Monitoring Reports (DMRs) has been modified. Analytical results alkalinity, pH, specific conductance, Total Organic Carbon, Total Residual Chlorine, and dissolved oxygen are no longer on the list. A footnote (footnote 5) was added to the table to clarify that while analytical testing for all parameters required by the WET test must be conducted and documented, only those listed in the effluent limitations table must be reported in the DMRs.
5. The sampling time for WET tests has been changed from the second week in June and September to any time in June or September.

## COMMENT NO. 1

It is unclear how, even if the facility was to discharge all of the 7,000 gpd extracted from its wells and all stored cooling water it could realize 25,000 gpd or even the 20,000 gpd listed as maximum discharge volume in the past. Likely it is because 7,000 gpd is the average, not maximum, daily well withdrawal but the wells can provide a much greater daily volume. This raises the question of what is the safe yield of the wells and the current pumping capacity because a discharge volume exceeding the safe yield (state permitting is not required until a daily withdrawal reaches 100,000 making it unlikely the safe yield of the wells has been investigated) of the wells would be counterproductive. Over withdrawing leads to a reduction in groundwater leading to a reduction in available base flow to the adjacent river reach. Also a permitted volume greater than necessary undermines the intent of the clean Water Act's NPDES program to reduce (or even eliminate) wastewater discharges to surface waters. We would like to advocate for permit flow limitations even lower than those proposed: perhaps 0.020 MGD daily maximum and 0.0075 MGD monthly average as these numbers appear to reflect the volumes currently discharged by the facility. If the facility expands or technology changes and these changes require greater volumes of cooling water or heat the water more quickly, then the facility could upgrade their current cooling system to meet the increased demand for cooling and/or cooling water.

## RESPONSE NO. 1

### Well Yield

The 7,000 gpd reported as the maximum well withdrawal in section 6.2.2 of the fact sheet was in error. EPA apologizes for this error. The actual yield for both wells together has been estimated by the permittee to be 40 to 45 gpm. Currently the groundwater is only used for cooling water. Other water used in the facility is provided by the municipal water supply system. The well withdrawal information was provided in the fact sheet as background information since the Clean Water Act, under which the NPDES permit program is authorized, does not address groundwater withdrawal.

### Flow Limitations

On the issue of flow limitations, EPA agrees that the maximum daily flow limit could be reduced to 0.020 MGD as this more accurately reflects the actual maximum discharge flows during the last permit period (up to 0.0198 MGD). However, since there have been a few instances of reported average monthly flows exceeding 0.008 MGD, EPA maintains that the monthly average flow limit of 0.0082 is appropriate. The final permit reflects a change in the maximum daily flow from outfall 003 to 0.020 MGD.

## COMMENT NO. 2

We also note the flow is an estimate and it does not appear the permit requires daily measurements though the discharge data suggests the Permittee provides daily flow volumes. We would like to advocate for continued daily flow reporting requirements for this facility because this information would allow interested parties to estimate the loadings of pollutants from this facility. The Fact Sheet notes the metals concentrations found in the discharge are elevated but with the considerable discharge the in-stream concentrations would not rise to levels of concern. However, what may be of a concern are downstream impacts. Since there are downstream impoundments, it is likely at least some of the metals in the discharge are settling into the impoundment where they can enter the food web and bioaccumulate/biomagnify. Knowing the flow and concentration would allow a rough calculation of potential loadings and some insight into whether there is a potential for the pollutants from this discharge to impact the downstream biota. We would certainly encourage,

**at the least, an accurate flow estimate be made at the time of the grab sample for the biannual metals analysis.**

#### **RESPONSE NO. 2**

The discharge flow from outfall 003 is monitored using flow controllers connected to temperature monitors. Quabbin recycles the cooling water as much as possible thereby limiting the volume of groundwater needed. A small cooling water reservoir is maintained in two hydraulically connected cooling water holding tanks. The holding tanks also serve to equalize temperature and allow the water to cool off when the machines are not in use. The cooling water is recycled until the water temperature reaches 82 °F. When the water is 82 °F, the well pumps are automatically activated and groundwater is pumped into the holding tanks until the temperature falls below 82 °F. Discharge occurs when the groundwater coming into the holding tanks causes the tanks to overflow. The amount of groundwater used depends on the number, type and location of extrusion machines being used as well as the ambient groundwater temperature. The discharge flow reported to EPA has been estimated using the flow metering results of the groundwater pumped into the holding tanks. The estimate is conservative because, due to varying evaporative losses, the flow of groundwater entering the system may be slightly greater than that going out of it. Monitoring flow on the discharge would be logistically difficult given the current configuration of the holding tanks.

Since the cooling water system is equalized in the holding tanks, the discharge reflects an accumulation of cooling water over varying time periods. Therefore, there is no direct relationship between discharge water quality and instantaneous flow measurements taken at the time of sampling.

EPA acknowledges that the monitoring requirements for flow on the table in Part I.A.1 are not reflective of the actual flow measurement system. EPA has revised the table to indicate that flow must be monitored continuously with a recorder.

#### **COMMENT NO. 3**

**The addition of whole effluent toxicity (WET) testing is a significant step in ensuring the protection of the Ware River. Since this is a facility with contact cooling water, there exists the possibility of contamination or synergistic interactions of pollutants in the wastewater. The WET testing affords, as noted in the Fact Sheet, a better way to monitor for toxicity than testing for individual constituents. We would, however, like to make an argument for rethinking the possibility of a reduction in monitoring frequency request after just one year. The flows from this facility are quite variable and it is likely the products/materials they produce and use may vary over time. WET tests typically do not afford much flexibility on when they are performed since laboratory time must be scheduled in advance. With just one year of testing - two tests – it is unlikely the WET testing will capture a range of conditions found at this manufacturing facility such as different discharge volumes, number of machines in use when sample water is obtained and type of wire coating begin applied.**

#### **RESPONSE NO. 3**

EPA finds that the WET testing protocol required by the permit is appropriate for the nature of the discharge and the dilution available for the stream. In accordance with the standard conditions of the permit (Part II.D.1.a.(2)), the facility must notify EPA if changes are anticipated that may result in increasing pollutant discharges that are not already limited in the permit.

#### **COMMENT NO. 4**

**The Fact Sheet mentions color is frequently added to the pellets used in the encasing of the wire. Footnote number 4 of the draft permit addresses the possibility of objectionable color in the effluent. We would like to suggest, if it is possible, some requirements be added that would**

**specifically assess this limitation – some measure of the color of the effluent and the possibility it might result in some near field water discoloration.**

#### **RESPONSE NO. 4**

The dyes that are used, called "color concentrate", are insoluble in water. The color concentrate is mixed with various polymers during the extrusion process and becomes further encapsulated. No observation of color concentrate leaching into the cooling water has ever been observed. Therefore, EPA finds that no additional requirements are necessary beyond the standard requirement in the permit to ensure, by observation, that the discharge not cause objectionable discoloration of the receiving waters.

#### **COMMENT NO. 5**

**The data presented indicates the discharge has rarely increased in-stream temperatures beyond a degree. What would help in assessing this information is whether these in-stream temperature differences represent the more trying circumstances of a maximum daily flow, low river flow and the heat of a hot summer day. The significant dilution ration under 7Q10 flows suggests the heated effluent should not be a problem so it is a surprise to see any effect on in-stream temperatures from this discharge and if the difference was measured when the effluent volume was not a daily maximum or under stressful summer conditions that there may be reason to continue in-stream monitoring. We also note the temperature sampling requirements are for once per month grab sample with no other qualifications or guidance on the sampling of temperature. As noted above, this is a highly variable discharge, while the average flow is only thousands of gallons a day there are daily maximums of nearly 20,000 gpd. It would be nice to capture the temperature variability as it is related to flow and this suggests a more frequent sampling is needed and one that captures a typical flow and one of the higher daily maximums – at least in the summer season.**

#### **RESPONSE NO. 5**

EPA disagrees that additional instream monitoring is necessary. In the fact sheet, the dilution factor was calculated using the maximum daily flow allowed in the draft permit which was 25,000 gpd. In response to the first comment from Riverways, EPA has agreed to reduce the maximum daily flow allowed to 20,000 gpd since it is more reflective of actual maximum flows.

According to the Chicopee River Basin 1998 Water Quality Assessment Report (WQAR), temperatures in Segment MA36-06 of the Ware River range from 55 to 73 °F. Assuming that the highest upstream temperature in the Ware River occurs during the low flow periods in the heat of the summer, the impact that the discharge would have on the downstream temperatures can be estimated as follows:

$$\text{Temperature Downstream} = \frac{73\text{ °F} (18.7\text{ cfs}) + 82\text{ °F} (0.0309\text{ cfs})}{18.7\text{ cfs} + 0.0309\text{ cfs}} = 73.0149\text{ °F}$$

where the 7Q10 low flow is 18.7 cfs (see section 6.3 of the fact sheet).

The potential impact of the discharge on the downstream temperature in the Ware River is less than 1 °F, as demonstrated both theoretically, in the calculation above, and empirically by monitoring in all seasons and varying flow conditions for over five years. Thus, there is no potential for the discharge to cause an exceedance of water quality standards in the Ware River.